Tenda®

11N Wireless Broadband Router

User Guide

www.tenda.cn

W268R
Wireless-N Broadband Router
with Internal Antenna

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Chapter 1 Introduction

Thank you for purchasing Tenda 11N Wireless Broadband Router!

W268R utilizes advanced MIMO technology which increases transmission range to over 6 times of ordinary 802.11g products. Compatible with IEEE802.11n and IEEE802.11g/b standards, it can provide up to 150Mbps stable transmission rate. Additionally, it includes router, wireless access point, four-port switch and firewall in one, dedicated to SOHOs (Small Office/Home Office) and family networking.

It supports WDS (Wireless Distribution System) function for repeating and amplifying the signals to extend the wireless network coverage. In addition, the router also supports all of the latest wireless security features, such as 64/128-bit WEP, WPA, WPA2, WPA&WPA and WPS (PBC and PIN) encryption methods, packet filtering and port forwarding, to prevent unauthorized access and protect your network against malicious attack.

URL and MAC address filtering can make it easy for parents and network administrators to manage network activity and QoS can control the bandwidth of specific computer's

downloading speed. In addition, UPnP and WMM support can help to improve your MSN voice.

The Setup Wizard, included with the software CD, makes installation and access to the Internet fast and easy even for the non-savvy users.

1.1 Product Features

- Includes router, wireless access point, four-port switch and firewall all-in-one
- Provides up to 150Mbps uploading and downloading speed
- Supports two WPS (Wi-Fi Protected Setup) encryption methods: PBC and PIN
- Compliant to IEEE802.11n, IEEE802.11g, IEEE802.11b, IEEE802.3 and IEEE802.3u standards
- Supports over 8 times transmission range of 11G products
- Supports 64/128-bit WEP, WPA, WPA2, WPA&WPA2 encryption methods
- Supports RTS/CTS protocol and data partitioning function
- Provides one 10/100Mbps Auto-Negotiation Ethernet WAN port

- Provides four 10/100Mbps Auto-Negotiation Ethernet LAN ports
- Supports xDSL/Cable MODEM, static and dynamic IP in community networking
- Supports remote/local Web management
- Supports WMM to better smooth your voice and video
- Supports SSID stealth mode and access control based over MAC address (up to 30 entries)
- Supports Auto MDI/MDIX
- Supports wireless Roaming technology for high-efficient wireless connections
- Supports auto negotiation/manual mode for 802.11b/802.11g/802.11n
- Supports UPnP and DDNS
- Supports Firefox 1.0, IE5.5 or above
- Supports SNTP
- Supports virtual server, DMZ host
- Built-in firewall to prevent network attacks
- Supports DHCP server/client
- Supports auto wireless channel selection
- Supports LAN access control to the Internet
- Provides syslog to record the status of the router
- Supports WDS wireless network extension
- Supports QoS function
- Two built-in omni-directional antennas

1.2 Package Contents

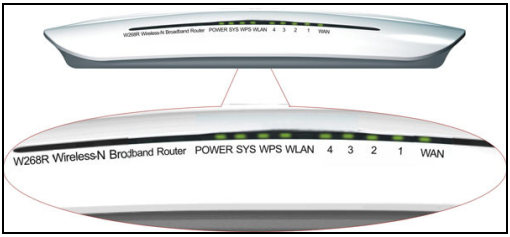
Please unpack the box and check the following items:

- One W268R 11N Wireless Broadband Router
- One Quick Installation Guide
- One Power Adapter
- One software CD

If any of listed items are missing or damaged, please contact the Tenda reseller for immediate replacement.

1.3 LED Indicator and Port Description

Front panel LED indicator description (from L to R):



POWER LED

Illuminates green to indicate the router is on and has power.

SYS LED

Flashes green to indicate the router is operating correctly.

WPS LED

Flashes to indicate the device is communicating in WPS mode.

WLAN LED

Wireless signal indicator, flashes green to indicate the wireless function is enabled.

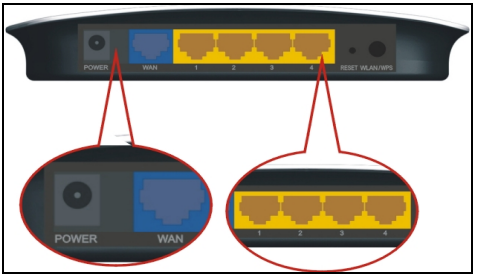
LAN (4,3,2,1) LEDs

Wired local network indicators are illuminated when connected to an Ethernet device; flashing indicates the device is transmitting and/or receiving data.

WAN LED

Wide Area Network indicator is always illuminated to indicate the router's WAN port is properly connected; flashing indicates the port is transmitting and/or receiving data packets.

Rear panel port description (from L to R）



POWER

The jack is for power adapter connection. Please use the included 9V DC AC adapter.

WAN

A 100Mbps Ethernet port that can be connected to a MODEM, Switch, router, DSL or Cable MODEM, or other Ethernet device for connecting to the Internet.

LAN (1, 2, 3, 4)

Four 10/100Mbps Ethernet ports that can be connected to an Ethernet switch, Ethernet router, or NIC card.

RESET

The system reset button. Press and hold this button for 7 seconds and all configured settings will be deleted and router settings will be restored to original factory default.

WPS

Press and hold the WPS button for 1 second and the WPS

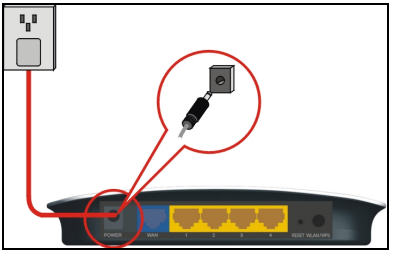
feature will be enabled. The WPS LED will flash when communicating in this mode.

Chapter 2 Hardware Installation

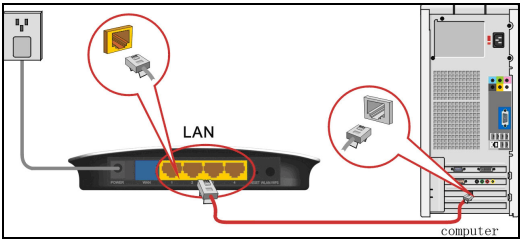
2.1 How to Install the Router

After you unpack the box, please follow the steps below to setup your router. For better wireless performance, please put the device in the middle of the wireless coverage area.

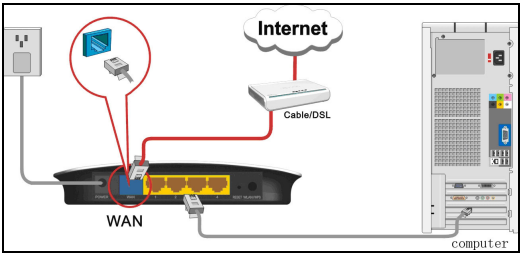
1. Please use the included AC adapter to power your router. IMPORTANT: Use of a different power adapter could cause damage and void the warranty for this product.



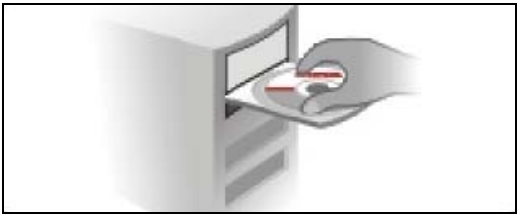
2. Please connect a LAN cable to the LAN port of the router and then to the network adapter of your computer.



3. Please connect your broadband line provided by your ISP to the WAN port.

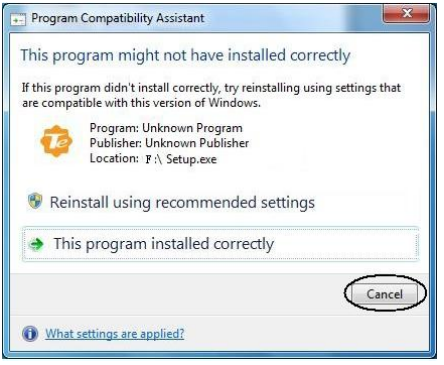


4. Insert the included software CD into the CD drive of your computer. After the software initiates, double click the “Setup” icon and follow the instructions to complete the installation. You can also enter the router’s web page to complete the setup and configure your router. (For more details please refer to Chapter 3.)



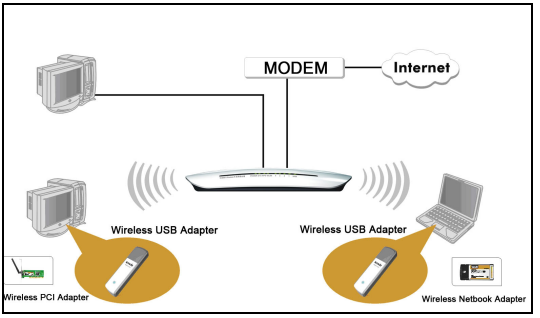
Note:

If your operating system is Windows 7 and the "Program Compatibility Assistant" window appears please click, "This program installed correctly", to finish the router setup process.


Program Compatibility Assistant
This program might not have installed correctly
If this program didn't install correctly, try reinstalling using settings that are compatible with this version of Windows.
Program: Unknown Program
Publisher: Unknown Publisher
Location: F:\ Setup.exe
Reinstall using recommended settings
This program installed correctly
Cancel
What settings are applied?

2.2 Network Application Plan

Usually, a wireless LAN network is positioned in an area where each access point is setup in a dedicated location to ensure optimum wireless coverage and consistent communication service. Generally speaking, it is in the center of the area to reduce “dead spots”.



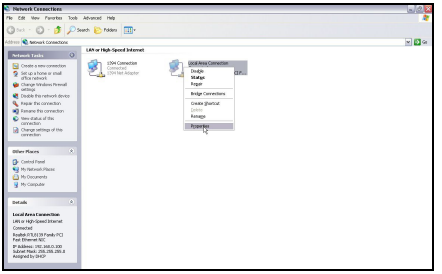
Chapter 3 How to Login to the Router

This chapter explains how to enter the router's web page. After you have finished the hardware installation the following steps will assist you in setting the network configurations for you computer.

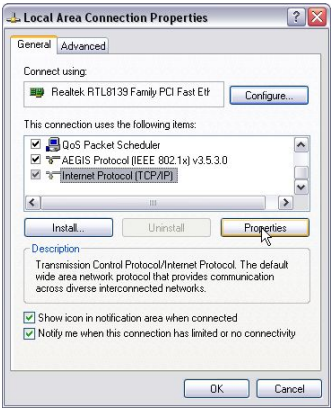
3.1 How to Set the Network Configurations

1. From "**Control Panel**" open "**Network Connections**".

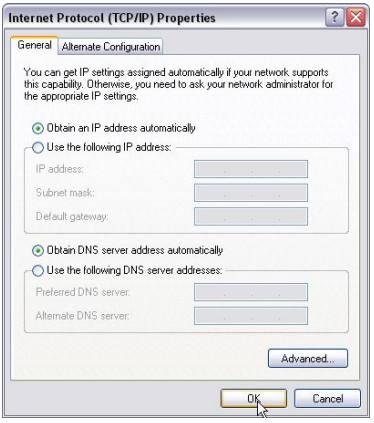
2. Right click "**Local Area Connection**" for network and select "**Properties**".



3. Select "**Internet Protocol (TCP/IP)**" and click "**Properties**".



4. Select "**Obtain an IP address automatically**" and "**Obtain DNS server address automatically**". Click "**OK**" to save the configurations.


Internet Protocol (TCP/IP) Properties
General
Alternate Configuration
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

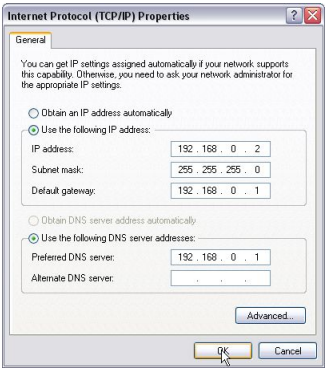
Or select "**Use the following IP address**" and enter the IP address, Subnet mask, Default gateway as follows:

IP Address: 192.168.0.XXX: (XXX is a number from 2~254)

Subnet Mask: 255.255.255.0

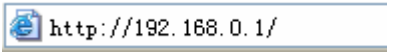
Gateway: 192.168.0.1

DNS server: You should input the DNS server address provided by your ISP. Otherwise, you can use the router's default gateway as the DNS proxy server. Click "**OK**" to save the configurations.


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 192 . 168 . 0 . 2
Subnet mask: 255 . 255 . 255 . 0
Default gateway: 192 . 168 . 0 . 1
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server: 192 . 168 . 0 . 1
Alternate DNS server:
Advanced...
OK
Cancel

3.2 Login to the Router

1. To access the router's web-based interface, launch a web browser such as Internet Explorer or Firefox and enter the router's default IP address, http://192.168.0.1. Press "**Enter**".



2. Type “**admin**” as both “User Name” and “Password”. Click “**OK**”.

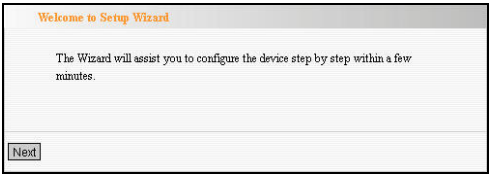
3. If you entered the user name and password correctly, the following screen will be displayed.

Chapter 4 Quick Setup Guide

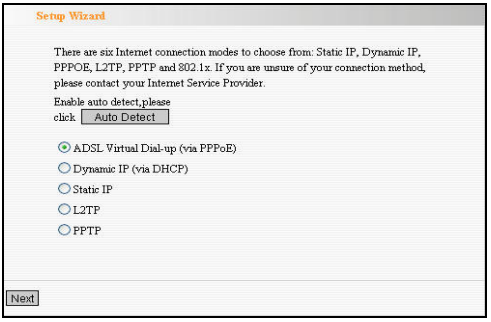
This chapter outlines how to quickly access the Internet. Please follow this guide to connect your router to the Internet.

4.1 Setup Wizard

1. Install the software CD into your computer and after the software initiates double click the "**Setup**" icon and "**Welcome to Setup Wizard**" will be displayed, click "**Next**".



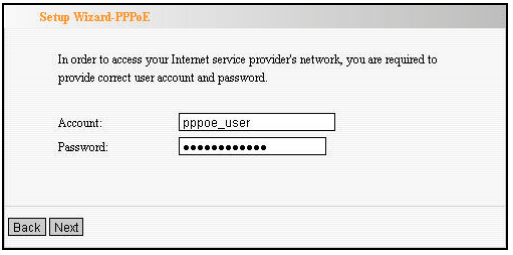
2. In this screen, select the Internet connection mode you use. If you are unsure of the mode, press the "**Auto Detect**" button (or you can contact your Internet Service Provider for the mode to be used), and then click "**Next**".


Setup Wizard
There are six Internet connection modes to choose from: Static IP, Dynamic IP, PPPOE, L2TP, PPTP and 802.1x. If you are unsure of your connection method, please contact your Internet Service Provider.
Enable auto detect,please click
Auto Detect
ADSL Virtual Dial-up (via PPPoE)
Dynamic IP (via DHCP)
Static IP
L2TP
PPTP
Next

ADSL Virtual Dial-up (Via PPPoE)

Enter the Account and Password provided by your ISP, and click "**Next**".

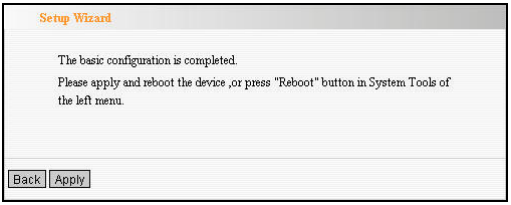
For example:



Dynamic IP (Via DHCP)

If your connection mode is Dynamic IP, it means your IP address keeps changing every time you connect. You do not need to enter the information like other modes. Click "**Next**"

and "**Save**" to finish the settings.


Setup Wizard
The basic configuration is completed.
Please apply and reboot the device ,or press "Reboot" button in System Tools of the left menu.
Back
Apply

Static IP

In this screen, fill the network address information from your ISP in the IP Address, Subnet Mask, Gateway and Primary DNS server fields and click "**Next**".

For example:

ISP provides the following TCP/IP parameters as follows:

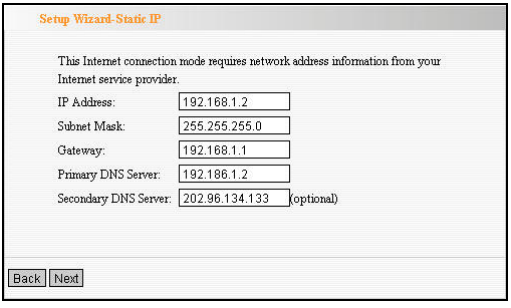
IP Address: 192.168.1.2

Subnet Mask: 255.255.255.0

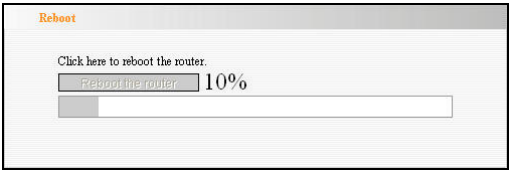
Gateway: 192.168.1.1

Primary DNS Server: 192.168.1.2

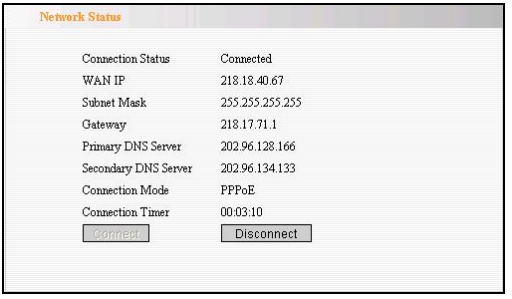
Alternate DNS Server: 202.96.134.133



Click “**Save**” to complete the setup wizard. The router will record the settings you made. To activate the settings, it is recommended to select “Reboot the Router” from “System Tool” of the left menu. During the rebooting process, please wait for a few minutes and **DO NOT** power off your computer.



After rebooting, click the “***System Status***” in the left menu of the Web-based Utility to find out the current network and system information. If the “**Connection Status**” is “**Connected**”, congratulations you completed the router’s basic settings and you are now connected to the Internet. If you want to modify your configuration, please proceed to the following explanations for Advanced Settings.



L2TP

L2TP Server IP: Enter the Server IP provided by your ISP.

User Name: Enter L2TP username.

Password: Enter L2TP password.

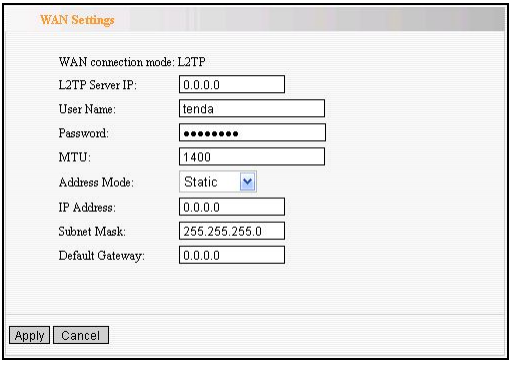
MTU: Maximum Transmission Unit, you may need to change it for optimal performance with your specific ISP. 1400 is the default MTU.

Address Mode: Select “Static” if your ISP supplies you with the IP address, subnet mask, and gateway. In most cases, select Dynamic.

IP Address: Enter the L2TP IP address supplied by your ISP.

Subnet Mask: Enter the Subnet Mask supplied by your ISP.

Default Gateway: Enter the Default Gateway supplied by your ISP.



PPTP

PPTP Server IP: Enter the Server IP provided by your ISP.

User Name: Enter PPTP username provided by your ISP.

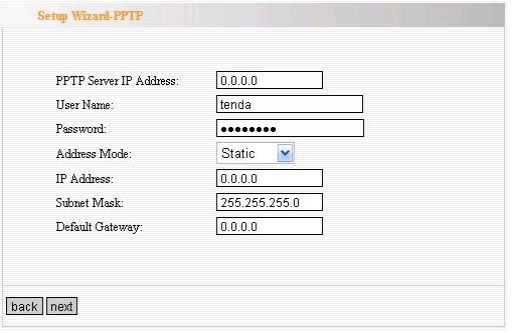
Password: Enter PPTP password provided by your ISP.

Address Mode: Select “Static” if your ISP supplies you with the IP address, subnet mask, and gateway. In most cases, select Dynamic.

IP Address: Enter the PPTP IP address supplied by your ISP.

Subnet Mask: Enter the Subnet Mask supplied by your ISP.

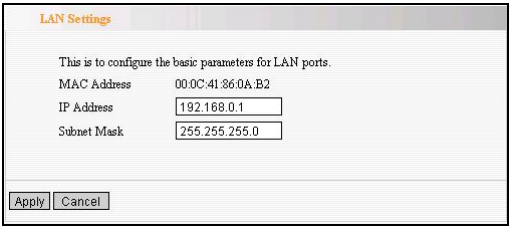
Default Gateway: Enter the Default Gateway supplied by your ISP.



Chapter 5 Advanced Settings

5.1 LAN Settings

LAN Settings are for the basic TCP/IP parameters of LAN ports.

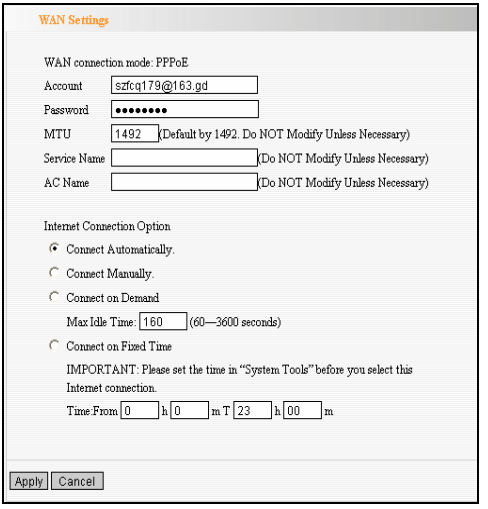


- **MAC Address:** The router's physical MAC address as seen on your local network, which is unchangeable.
- **IP Address:** The router's LAN IP addresses (not your PC's IP address). 192.168.0.1 is the default value.
- **Subnet Mask:** It displays the router's subnet mask for measurement of the network size. 255.255.255.0 is the default value.
- **IMPORTANT:** Once you modify the IP address, you need to remember it for the next time you login to the web-based utility.

5.2 WAN Settings

After you have selected the ISP connection mode in “Setup Wizard” and would like to modify or configure the related settings in detail.

Virtual Dial-up（PPPoE）



- ✧ **Connection Mode**: Show your current connection mode.
- ✧ **Account**: Enter the name provided by your ISP.
- ✧ **Password**: Enter password provided by your ISP.
- ✧ **MTU**: Maximum Transmission Unit. It is the size of

largest datagram that can be sent over a network. The default value is 1492. Do NOT modify it unless necessary, but if a specific website or web application software cannot open or be enabled, you can try to change the MTU value to 1450, 1400, etc.

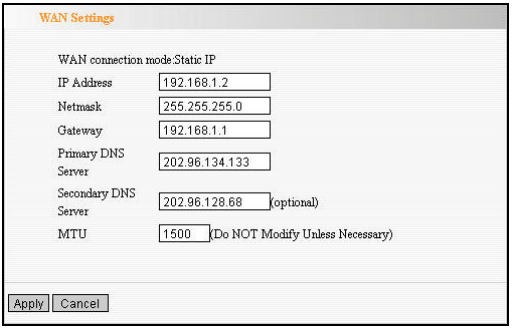
- ✧ **Service Name**: It is defined as a set of characteristics that are applied to a PPPoE connection. Enter it if provided. Do NOT modify it unless necessary.
- ✧ **AC Name**: Enter it if provided. Do NOT modify it unless necessary.
- ✧ **Connect Automatically**: Connect automatically to the Internet after rebooting the system or connection failure.
- ✧ **Connect Manually**: Connect to the Internet by user manually.
- ✧ **Connect on Demand**: Re-establish your connection to the Internet after the specific time (Max Idle Time). Zero means you are connected to the Internet all the times. Otherwise, enter the minutes to be elapsed before you are disconnected from the Internet.
- ✧ **Connect on Fixed Time**: Connect to the Internet during the time you set.

Notice:

The "Connect on Fixed Time" can be deployed only when you have set the current time in "Time

Settings" from "System Tools".

Static IP

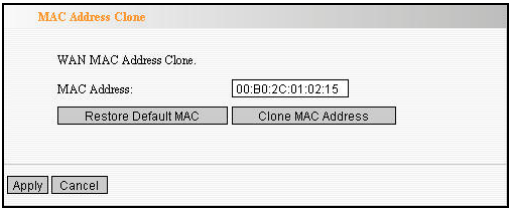


If Static IP connection mode is chosen, you can modify the following address information.

- ✧ **IP Address:** Enter the WAN IP address provided by your ISP.
- ✧ **Subnet Mask:** Enter the WAN Subnet Mask here.
- ✧ **Gateway:** Enter the WAN Gateway here.
- ✧ **Primary DNS Server:** Enter the Primary DNS server provided by your ISP.
- ✧ **Secondary DNS Server:** Enter the secondary DNS.

5.3 MAC Address Clone

This page is for the Router's MAC address to WAN.

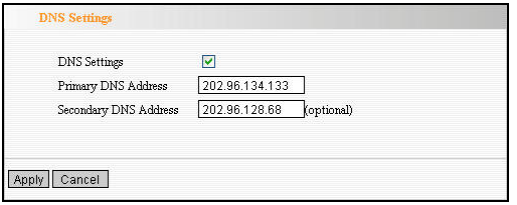


Some ISPs require end-user's MAC address to access their network. This feature copies the MAC address of your network device to the Router.

- **MAC Address:** The MAC address to be registered with your Internet service provider.
- **Clone MAC Address:** Register your PC's MAC address.
- **Restore Default MAC Address:** Restore to the default hardware MAC address.

5.4 DNS Settings

DNS is short for Domain Name System (or Service), an Internet service that translate domain names into IP addresses which are provided by your Internet Service Provider. Please consult your Internet Service Provider for details if you do not have them.



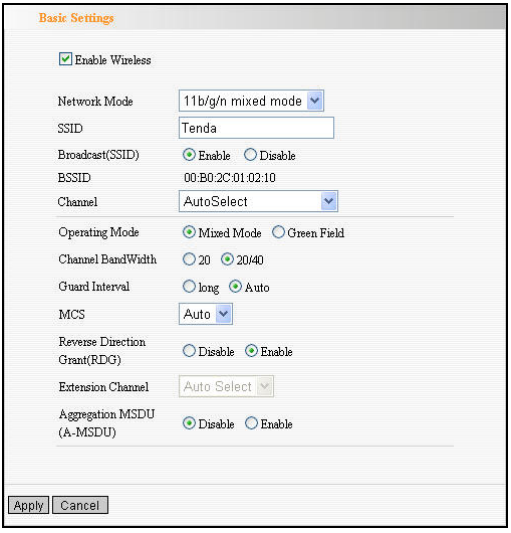
- **DNS:** Click the checkbox to enable the DNS server. The Router's DHCP sever will answer the client's requests and distribute DNS address.
- **Primary DNS Address:** Enter the necessary address provided by your ISP.
- **Secondary DNS Address:** Enter the second address if your ISP provides, which is optional.

***Notice**:*

After the settings are completed, reboot the device to activate the modified settings.

Chapter 6 Wireless Setting

6.1 Basic Settings



- **Enable Wireless:** Check to enable the router's wireless features; uncheck to disable it.
- **Network Mode**: Select one mode from the following. The default is 11b/g/n mode.
- **11b mode**: Allow the wireless client to connect with the device in 11b mode at the maximum speed of 11Mbps.
- **11g mode**: Allow the 11g/11n-compliant client device to connect with the AP at the maximum speed of 54Mbps.

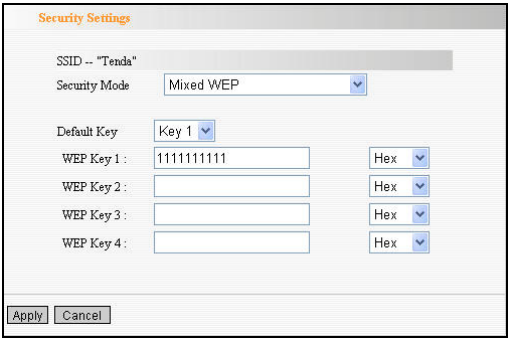
- **11b/g mode**：Allow the 11b/g-compliant client device to connect with the AP with auto-negotiation speed, and 11n wireless client to connect the device with 11g speed.
- **11b/g/n mode**：Allow 11b/g/n-compliant client device to connect with the AP with auto-negotiation speed.
- **SSID**：SSID (Service Set Identifier) is the unique name of the wireless network. This device has two SSID and the SSID is necessary.
- **Broadcast (SSID):** Select “Enable” to enable the device's SSID to be visible by wireless clients. The default is enabled.
- **BSSID**：Basic Service Set Identifier of wireless network. In IEEE802.11, BSSID is the MAC address of wireless access point.
- **Channel**：Specify the effective channel (from 1 to 13\Auto) of the wireless network.
- **Extension Channel**：To increase data throughput of wireless network, the extension channel range is used in 11n mode.
- **Channel Bandwidth**：Select the channel bandwidth to improve the wireless performance. When the network has 11b/g and 11n clients, you can select the 40M; when it is an 11n network, select 20/40M to improve its throughput.

6.2 Wireless Security Setting

It is used to configure the AP network's security setting. The following are the common six (ten in all) encryption methods, including Mixed WEP, WPA-personal, WPA2-personal, etc.

6.2.1 Mixed WEP

WEP (Wired Equivalent Privacy), a basic encryption method, usually encrypts wireless data using a series of digital keys (64 bits or 128 bits in length). By using the same keys on each of your wireless network devices, you can prevent unauthorized wireless devices from monitoring your transmissions or using your wireless resources. Select Mixed WEP to enter the following window:



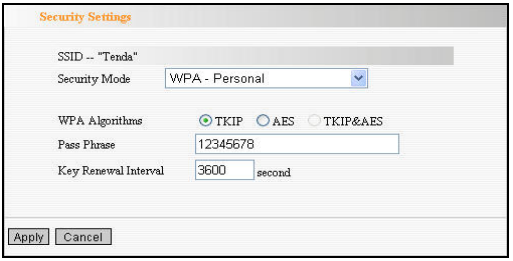
✧ **Select SSID:** Select the SSID (main SSID or minor

SSID) to configure security setting from the drop-down menu.

- ✧ **Security Mode**：From the drop-down menu select the corresponding security encryption modes.
- ✧ **WEP Key1~4**：Set the WEP key with the format of ASCII and Hex. You can enter ASCII code (5 or 13 ASCII characters. Illegal character as "/" is not allowed.) Or 10/26 hex characters.
- ✧ **Default Key**：Select one key from the four configured keys as the current available one.

6.2.2 WPA-Personal

WPA (Wi-Fi Protected Access), a Wi-Fi standard, is a more recent wireless encryption scheme, designed to improve the security features of WEP. It applies more powerful encryption types (such as TKIP [Temporal Key Integrity Protocol] or AES [Advanced Encryption Standard]) and can change the keys dynamically on every authorized wireless device.



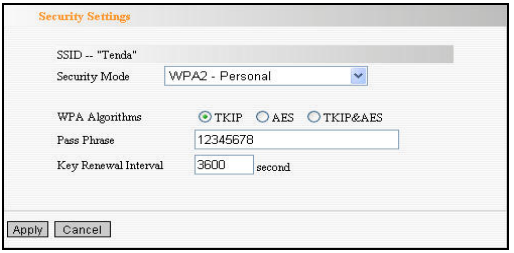
- ✧ **Select SSID**：Select the SSID (main SSID or minor

SSID) to configure security setting from the drop-down menu.

- ✧ **WPA Algorithms**：Provides TKIP [Temporal Key Integrity Protocol] or AES [Advanced Encryption Standard]. The default is TKIP mode.
- ✧ **Pass Phrase**：Enter the encrypted characters with 8-63 ASCII characters.
- ✧ **Key Renewal Interval**：Set the key's renewal period.

6.2.3 WPA2- Personal

WPA2 (Wi-Fi Protected Access version 2) provides higher security than WEP (Wireless Equivalent Privacy) and WPA (Wi-Fi Protected Access).



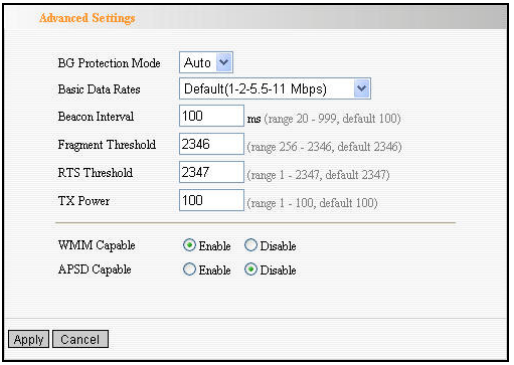
- ✧ **Select SSID**：Select the SSID (main SSID or minor SSID) to configure security setting from the drop-down menu.
- ✧ **WPA Algorithms**：Provides TKIP [Temporal Key Integrity Protocol] or AES [Advanced Encryption

Standard]. The default is TKIP mode.

- ✧ **Pass Phrase：** Enter the encrypted characters with 8-63 ASCII characters.
- ✧ **Key renewal Interval：** Set the key's renewal period.

6.3 Advanced Settings

This section is to configure the advanced wireless setting of the Router, including the Radio Preamble, 802.11g/n Rate, Fragmentation Threshold, RTS Threshold, etc.



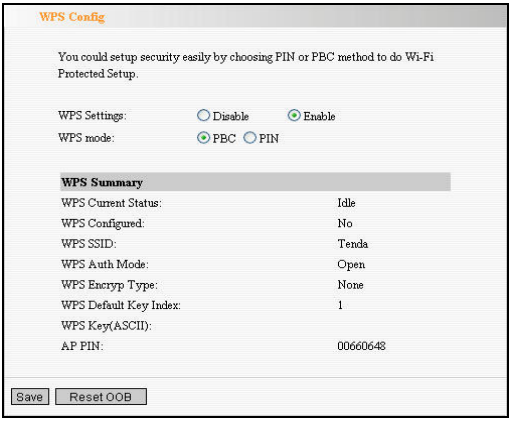
- ✧ **BG protection Mode:** Auto by default. It is for 11b/g wireless client to connect to an 11n wireless network smoothly in a complicated wireless area.
- ✧ **Basic Data Rates:** For different requirement, you can select one of the suitable Basic Data Rates. Here, default value is (1-2-5.5.-11Mbps…). It is recommended not to

modify this value.

- **Beacon Interval:** Set the beacon interval of wireless radio. Default value is 100. It is recommended not to modify this value.
- **Fragment Threshold:** The fragmentation threshold defines the maximum transmission packet size in bytes. The packet will be fragmented if the arrival is bigger than the threshold setting. The default size is 2346 bytes. It is recommended not to modify this value.
- **RTS Threshold:** RTS stands for “Request to Send”. This parameter controls what size data packet the frequency protocol issues to RTS packet. The default value of the attribute is 2346. It is recommended not to modify this value in SOHO environment.
- **TX Power:** Set the output power of wireless radio. The default value is 100.
- **WMM Capable:** It will enhance the data transfer performance of multimedia data when they’re being transferred over wireless network. It is recommended to enable this option.
- **APSD Capable:** It is used for auto power-saved service. The default is disabled.

6.4 WPS Settings

WPS (Wi-Fi Protected Setting) is an easy and quick method to establish the connection between the wireless network clients and the device through encrypted contents. The user only enters a PIN code or presses the WLAN/WPA button on the panel to configure it without manually selecting encryption method and secret keys. In the “Wireless settings” menu, click “WPS settings” to enter the next screen.



- **WPS settings：** To enable or disable WPS function. The default is “disable”.
- **WPS mode：** Provide two ways: PBC (Push-Button Configuration) and PIN code.
- **PBC：** Select the PBC or press and hold the WLAN/WPS button on the back panel of the device for about one second. The WPS LED indicator will flash for 2 minutes,

which means the WPS is enabled. During this time (flashing WPS LED), you can enable another device and implement the WPS/PBC connection between them. After two minutes, the WPS indicator will turn off, which means the WPS connection has been completed. If more clients are added, repeat the above steps. At present, the WPS supports up to 32 clients access.)

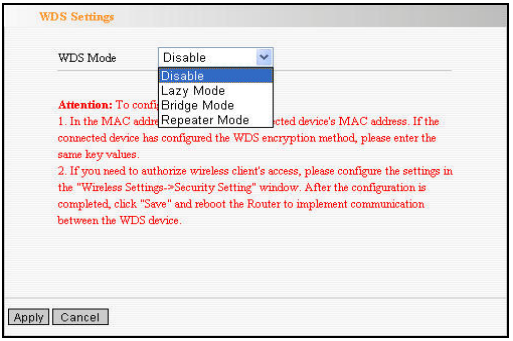
- **PIN**: If this option is enabled, you need to enter a wireless client's PIN code in the field and keep the same code in the WPS client.
- **WPS Summary**: Show the current state of Wi-Fi protected setting, including authorized mode, encryption type, default key and other information.
- **WPS Current Status**: Idle means WPS in idle state. Start MSC process means the process has been started and waits for being connected. Configured means the negotiation is successful between server and clients.
- **WPS Configured**: "yes" means WPS feature is enabled and goes into effect. "not used" means it is not used. Usually the AP-security has been enabled and will be displayed here as "not used".
- **WPS SSID**: Show the main SSID set by WPS.
- **WPS Auth. Mode**: The authorization mode deployed by WPS, generally WPA/WPA2-personal mode.
- **WPS Encrypt Type**: The encryption type used by WPS, generally AES/TKIP.
- **WPS key**: The effective key generated by AP

automatically.

- ✧ **AP PIN（KEY）：** The PIN code used by default.
- ✧ **Reset OOB：** When this button is pressed, the WPS client will be in an idle state, and WPS indicator will be turned off. AP will not respond to the WPS client's requests and set the security mode as WPA mode.

6.5 WDS Settings

WDS (Wireless Distribution System) is used to expand wireless coverage area. This Router provides three modes: Lazy, Bridge and Repeater.


WDS Settings
WDS Mode
Disable
Disable
Lazy Mode
Bridge Mode
Repeater Mode
Attention: To confi
cted device's MAC address. If the
connected device has configured the WDS encryption method, please enter the
same key values.
2. If you need to authorize wireless client's access, please configure the settings in
the "Wireless Settings->Security Setting" window. After the configuration is
completed, click "Save" and reboot the Router to implement communication
between the WDS device.
Apply
Cancel

- ✧ **Lazy:** In this mode, the connected device can be either then Bridge mode or Repeater mode and enter the router's BSSID to establish the connection.
- ✧ **Bridge:** You can wirelessly connect two or more wired networks via this mode. In this mode, you need to add

the Wireless MAC address of the connecting device into the Router's AP MAC address table or select one from the scanning table.

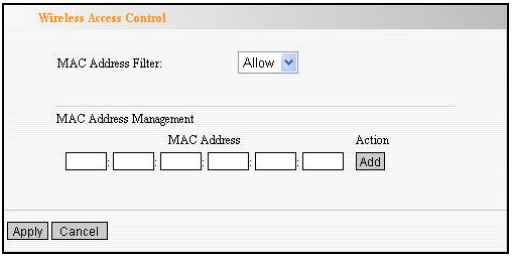
- ✧ **Repeater Mode**：In this mode, add the opposing MAC address into their individual AP MAC address table by manual or scanning to enlarge and extend the wireless radio.
- ✧ **Encrypt Type:** Select one from WEP, TKIP, or AES for security here.
- ✧ **Pass phrase:** Enter the encrypted key for wireless devices.
- ✧ **AP MAC:** Input the MAC address of another (opposing) wireless router you want to connect.

NOTE:

It is recommended that two wireless routers keep the same bandwidth, channel number, and security settings. Apply the settings and reboot the router to activate it.

6.6 Wireless Access Control

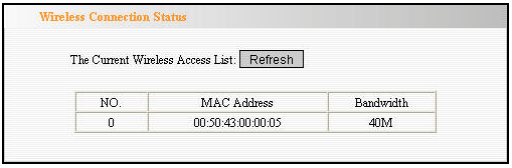
To secure your wireless LAN, the wireless access control is actually based on the MAC address management to allow or block the specific clients to access the wireless network. Select “Wireless Setting->Access Control” to display the following screen:



- **MAC Address Filter：** Enable/disable MAC address filter. Select “Close” to disallow MAC address; “disable” to prevent the MAC addresses in the list from accessing the wireless network; select “Allow” to allow the MAC address in the list to access the wireless network.
- **MAC Address Management：** Input the MAC address to implement the filter policy. Click “Add” to finish the MAC add operation.
- **MAC list：** Show the added MAC addresses. You can add or delete them.

6.7 Connection Status

This page shows wireless client’s connection status, including MAC address, Channel bandwidth, etc. Select “Wireless Setting->connection status” to enter the following screen:

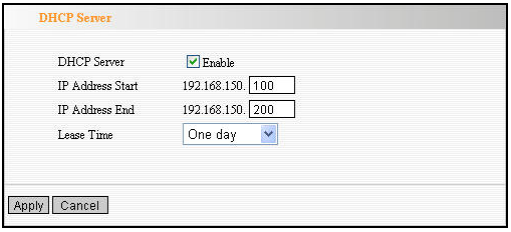


- **MAC Address**：Shows current MAC addresses of the hosts connecting to the Router.
- **Bandwidth**：Shows current bandwidth of the hosts (wireless client).

Chapter 7 DHCP Server

7.1 DHCP Settings

DHCP (Dynamic Host Control Protocol) is to assign an IP address to the computers on the LAN/private network. When you enable the DHCP Server, the DHCP Server will allocate automatically an unused IP address from the IP address pool to the requesting computer in premise of activating "Obtain an IP Address Automatically". So specifying the starting and ending address of the IP Address pool is needed.



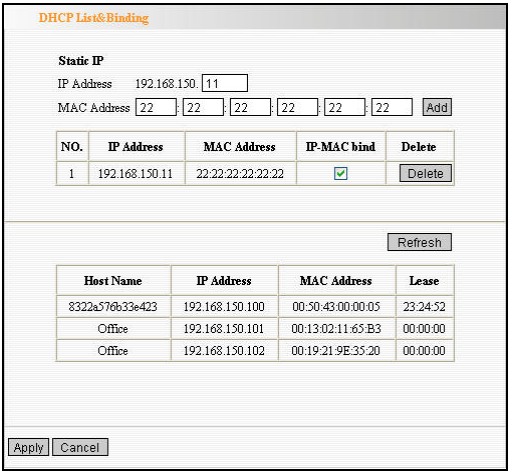
- **DHCP Server:** Activate the checkbox to enable DHCP server.
- **IP Address Start/End:** Enter the range of IP address for DHCP server distribution.
- **Lease Time:** The length of the IP address lease.

For example:

If the lease time is an hour, then DHCP server will reclaim the IP address in each hour.

7.2 DHCP List and Binding

The Static IP assignment is to add a specifically static IP address to the assigned MAC address. You can view the related information in the DHCP server list.

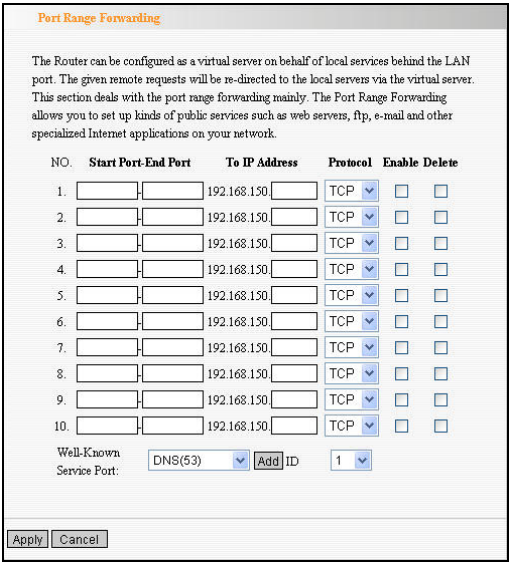

DHCP List&Binding
Static IP
IP Address 192.168.150. 11
MAC Address 22 : 22 : 22 : 22 : 22 : 22 Add
NO. IP Address MAC Address IP-MAC bind Delete
1 192.168.150.11 22:22:22:22:22:22 Delete
Refresh
Host Name IP Address MAC Address Lease
8322a576b33e423 192.168.150.100 00:50:43:00:00:05 23:24:52
Office 192.168.150.101 00:13:02:11:65:B3 00:00:00
Office 192.168.150.102 00:19:21:9E:35:20 00:00:00
Apply Cancel

- ✧ **IP Address:** Enter the IP address which needs to be bound.
- ✧ **MAC Address:** Enter the MAC address of the computer you want to assign the above IP address. Click “Add” to add the entry in the list.
- ✧ **Hostname:** The name of the computer which is added a new IP address.
- ✧ **Lease Time:** The left time length of the corresponding IP address lease.

Chapter 8 Virtual Server

8.1 Port Range Forwarding

This section deals with the port range forwarding. The Port Range Forwarding allows you to set up a range of public services such as web servers, ftp, e-mail and other specialized Internet applications to an assigned IP address on your LAN.


Port Range Forwarding
The Router can be configured as a virtual server on behalf of local services behind the LAN port. The given remote requests will be re-directed to the local servers via the virtual server. This section deals with the port range forwarding mainly. The Port Range Forwarding allows you to set up kinds of public services such as web servers, ftp, e-mail and other specialized Internet applications on your network.
NO. Start Port-End Port To IP Address Protocol Enable Delete
1. 192.168.150. TCP
2. 192.168.150. TCP
3. 192.168.150. TCP
4. 192.168.150. TCP
5. 192.168.150. TCP
6. 192.168.150. TCP
7. 192.168.150. TCP
8. 192.168.150. TCP
9. 192.168.150. TCP
10. 192.168.150. TCP
Well-Known Service Port: DNS(53) Add ID 1
Apply Cancel

✧ **Start / End Port:** Enter the start/end port number which

ranges the External ports used to set the server or Internet applications.

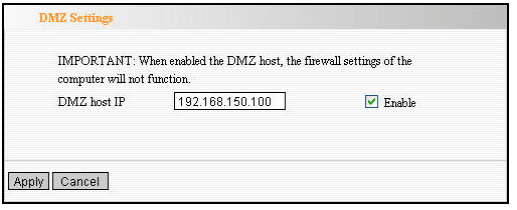
- ✧ **IP Address:** Enter the IP address of the PC where you want to set the applications.
- ✧ **Protocol:** Select the protocol (TCP/UDP/Both) for the application.
- ✧ **Delete/Enable:** Click to check it for corresponding operation.
- ✧ **Well-Known Service Port:** Select the well-known services as DNS, FTP from the drop-down menu to add to the configured one above.
- ✧ **Add**: Add the selected well-known port to the policy ID.

NOTE:

If you set the virtual server of the service port as 80, you must set the Web management port on Remote Web Management page to be any value except 80 such as 8080. Otherwise, there will be a conflict to disable the virtual server.

8.2 DMZ Settings

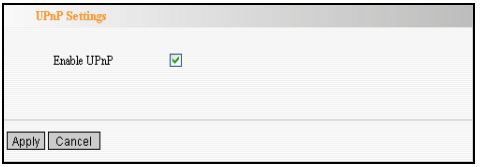
The DMZ function is to allow one computer in LAN to be exposed to the Internet for a special-purpose service as Internet gaming or video conferencing.



- **DMZ Host IP Address:** The IP address of the computer you want to expose.
- **Enable:** Click the checkbox to enable the DMZ host.
- **IMPORTANT:** When the DMZ host is enabled, the firewall settings of the DMZ host will not function.

8.3 UPNP Settings

It supports the latest Universal Plug and Play device drivers. UPnP is a standard function Windows ME, XP, or Vista or if you have installed software that supports UPnP. With the UPnP function, the internal host can request the router to process some special port switching so as to enable the external host to visit the resources of the internal host.

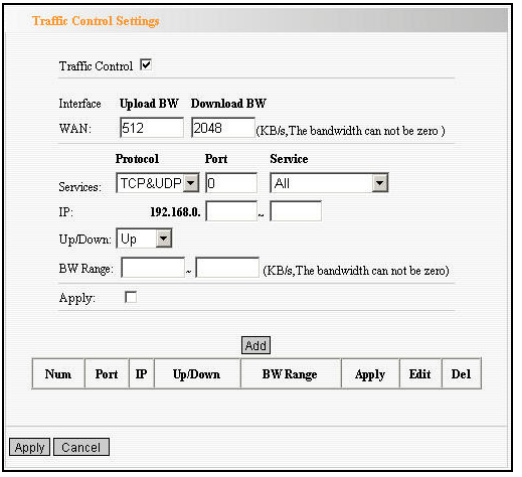


Enable UPnP: Click the checkbox to enable the UPnP.

Chapter 9 Traffic Control

9.1 Traffic Control

Traffic control is used to limit communication speed in the LAN and WAN. Up to 20 entries can be supported with the capability for at most 254 PCs' speed control, including for IP address range configuration.



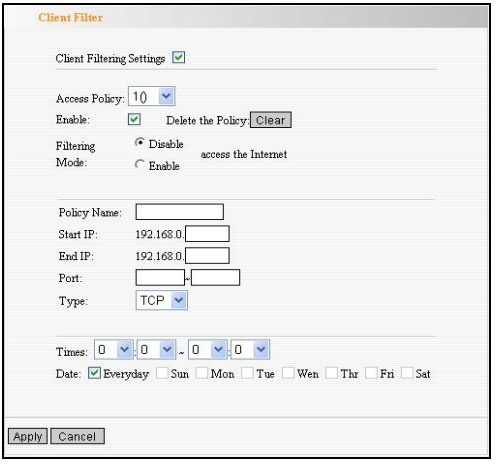
- ✧ **Enable Traffic Control:** To enable or disable the internal IP bandwidth control. The default is disabled.
- ✧ **Interface:** To limit the uploading and downloading bandwidth in WAN port.
- ✧ **Service:** To select the controlled service type, such as HTTP service.

- **IP Starting Address:** The first IP address for traffic control.
- **IP Ending Address:** The last IP address for traffic control.
- **Uploading/Downloading:** To specify the traffic heading way for the selected IP addresses: uploading or downloading.
- **Bandwidth:** To specify the uploading/downloading Min. /Max. Traffic speed (KB/s), which can not exceed the WAN speed.
- **Apply:** To enable the current editing rule. If not, the rule will be disabled.
- **Add:** After edit the rule, click the “add to list” button to add the current rule to rule list.
- **Apply:** Click “Save” to activate the current rule.
- **Cancel:** Click “Cancel” to drop all setting saved last time.

Chapter 10 Security Settings

10.1 Client Filter Settings

To further benefit your management of the computers in the network, you can control some ports access to Internet by the data packet filter function.

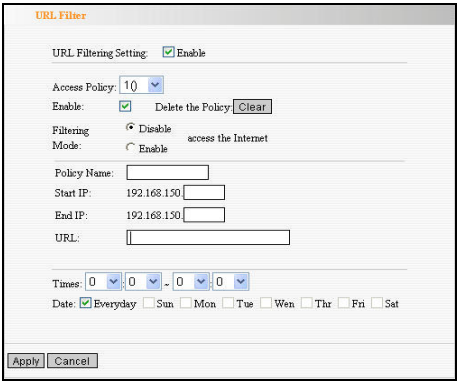


- **Client Filter:** Check to enable client filter.
- **Access Policy:** Select one number from the drop-down menu.
- **Enable:** Check to enable the access policy.
- **Clear the Policy:** Click “Clear” button to clear all settings for the policy.
- **Filter Mode:** Click one radio button to enable or disable to access the Internet.

- ✧ **Policy Name:** Enter a name for the access policy selected.
- ✧ **IP Start/End:** Enter the starting/ending IP address.
- ✧ **Port No.:** Enter the port range based over the protocol for access policy.
- ✧ **Protocol:** Select one protocol (TCP/UDP/Both) from the drop-down menu.
- ✧ **Times:** Select the time range of client filter.
- ✧ **Days:** Select the day(s) to run the access policy.

10.2 URL Filter Settings

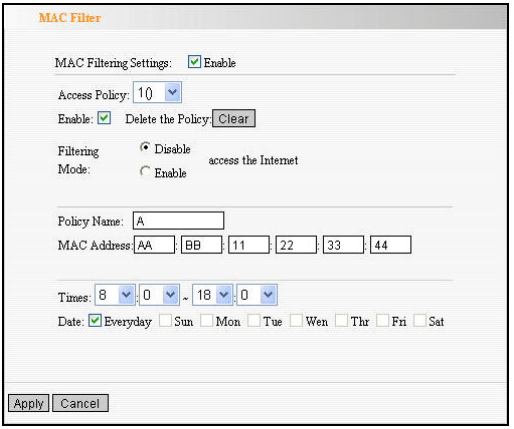
In order to control the computer to have access to websites, you can use URL filtering to allow the computer to have access to certain websites at fixed time and forbids it from having access to certain websites at fixed time.



- **URL Filter:** Check to enable URL filter.
- **Access Policy:** Select one number from the drop-down menu.
- **Enable:** Check to enable the access policy.
- **Clear the Policy:** Click “Clear” button to clear all settings for the policy.
- **Filter Mode:** Click one radio button to enable or disable to access the Internet.
- **Policy Name:** Enter a name for the access policy selected.
- **Start/End IP:** Enter the starting/ending IP address.
- **URL Strings:** Specify the text strings or keywords needed to be filtered. If any part of the URL contains these strings or words, the web page will not be accessible and displayed.
- **Times:** Select the time range of client filter.
- **Days:** Select the day(s) to run the access policy.

10.3 MAC Address Filter

In order to manage the computers in the network better, you could control the computer’s access to Internet by MAC Address Filtering.


MAC Filter
MAC Filtering Settings: Enable
Access Policy: 10
Enable: Delete the Policy: Clear
Filtering Mode: Disable Enable access the Internet
Policy Name: A
MAC Address: AA BB 11 22 33 44
Times: 8 : 0 ~ 18 : 0
Date: Everyday Sun Mon Tue Wen Thr Fri Sat
Apply Cancel

- **MAC Address Filter:** Check to enable MAC address filter.
- **Access Policy:** Select one number from the drop-down menu.
- **Enable:** Check to enable the access policy.
- **Clear the Policy:** Click “Clear” button to clear all settings for the policy.
- **Filter Mode:** Click one radio button to enable or disable to access the Internet.
- **Policy Name:** Enter a name for the access policy selected.
- **MAC Address:** Enter the MAC address you want to run the access policy.
- **Times:** Select the time range of client filter.

✧ **Days:** Select the day(s) to run the access policy.

✧ **Apply**： Click to make the settings go into effect.

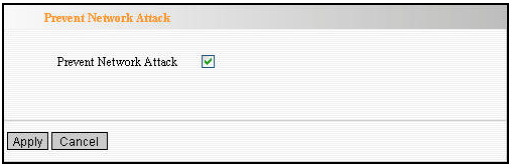
For example:

If you want to configure the host with MAC address 00:C0:9F:AD:FF:C5 not to access the Internet at 8：00-18：00, you need to set it as above.

10.4 Prevent Network Attack

This section is to protect the internal network from exotic attack such as SYN Flooding attack, Smurf attack, LAND attack, etc. Once detecting the unknown attack, the router will restrict its bandwidth automatically.

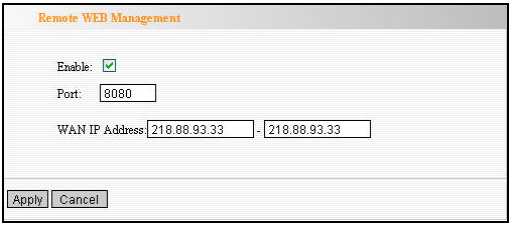
The attacker's IP address can be found in the "System Log".



Prevent Network Attack: Check to enable it for attack prevention.

10.5 Remote Web Management

This section is to allow the network administrator to manage the Router remotely. If you want to access the Router from outside the local network, please select the “Enable”.



- **Enable:** Check to enable remote web management.
- **Port:** The management port open to outside access. The default value is 80.
- **WAN IP Address:** Specify the range of the WAN IP address for remote management.

Note:

1. **If you want to login the device’s Web-based interface via port 8080, you need use the format of WAN IP address: port (for example http://219.134.32.101: 8080) to implement remote login.**
2. **If your WAN IP address starts and ends with**

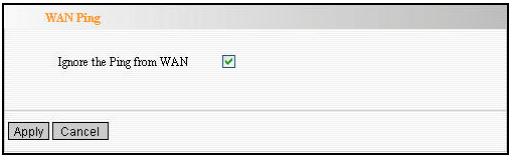
0.0.0.0, it means all hosts in WAN can implement remote Web management. If you change the WAN IP address as 218.88.93.33-218.88.93.35, then only the IP addresses as 218.88.93.33, 218.88.93.34 and 218.88.93.35 can access the Router.

For example:

If you want to configure the IP address 218.88.93.33 to access the device's web interface, please set it as follows:

10.6 WAN Ping

The ping test is to check the status of your internet connection. When disabling the test, the system will ignore the ping test from WAN.

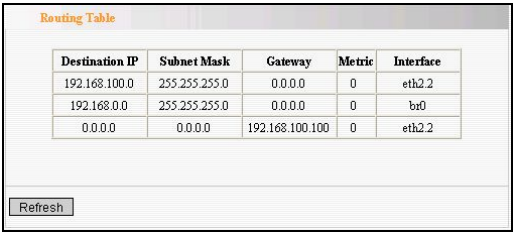


✧ **Ignore Ping from WAN:** Check to ignore the ping request and give no reply.

Chapter11 Routing Setting

11.1 Routing Table

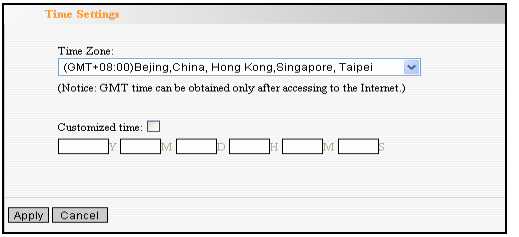
The main duty for a router is to look for a best path for every data frame, and transfer this data frame to a destination. So, it's essential for the router to choose the best path, i.e. routing arithmetic. In order to finish this function, many transferring paths, i.e. routing table, are saved in the router, for choosing when needed.



Chapter 12 System Tools

12.1 Time Settings

This section is to select the time zone for your location. If you turn off the Router, the settings for time disappear. However, the Router will automatically obtain the GMT time again once it has access to the Internet.



Time Zone: Select your time zone from the drop-down menu.

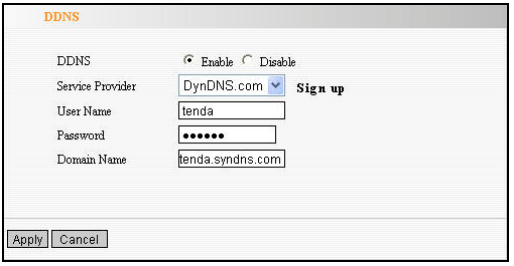
Customized time: Enter the time you customize.

Note:

When the Router is powered off, the time setting will be lost. Before the Router will obtain GMT time automatically, you need connect with the Internet and obtain the GMT time, or set the time on this page first. Then the time in other features (e.g. firewall) can be activated.

12.2 DDNS

The **DDNS (Dynamic Domain Name System)** is supported in this router. It assigns a fixed host and domain name to a dynamic Internet IP address, which is used to monitor website hosting, FTP server and so on behind the router. If you want to activate this function, please select “Enable” and a DDNS service provider to sign up.



- **Main Features:** Your ISP provides dynamic IP address, DDNS is used to capture the changeable IP address and match the fixed domain. Then users can have access to the Internet to communicate with others.
  DDNS can help you establish virtual host in your home and company.
- **DDNS:** Click the radio button to enable or disable the DDNS service.
- **Service Provider:** Select one from the drop-down menu and press “Sign up” for registration.

- ✧ **User Name:** Enter the user name the same as the registration name.
- ✧ **Password:** Enter the password you set.
- ✧ **Domain Name:** Enter the domain name which is optional.

For example:

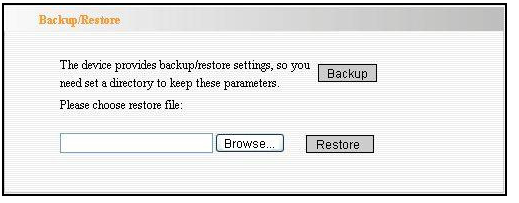
In the local host 192.168.0.10 establish a Web server, and register in 3322.org as follows:

User name	tenda
Password	123456
Domain Name	tenda.vicp.net

After mapping the port in the virtual server, setting account information in DDNS server and in the address field entering (for example http://tenda.3322.org), you can then access the Web page.

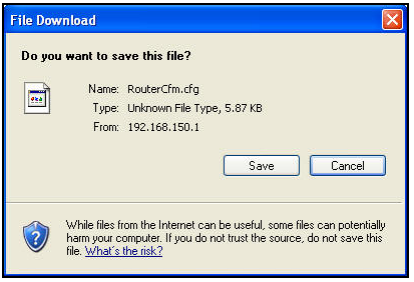
12.3 Backup/Restore Settings

The device provides backup/restore settings, so you need to set a directory to keep these parameters.



Backup Setting:

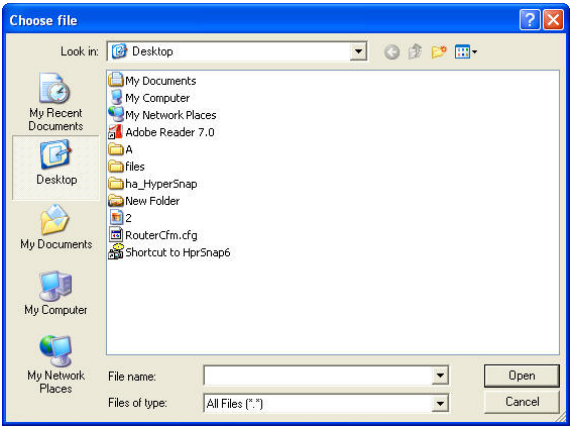
Click “Backup” button to back up the Router’s settings and select the path for save.


File Download
Do you want to save this file?
Name: RouterCfm.cfg
Type: Unknown File Type, 5.87 KB
From: 192.168.150.1
Save
Cancel
While files from the Internet can be useful, some files can potentially harm your computer. If you do not trust the source, do not save this file. What's the risk?

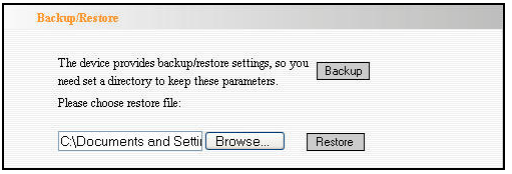
Click “Save” to save the configuration files.

Restore Setting:

Click “Browse” button to select the backup files.

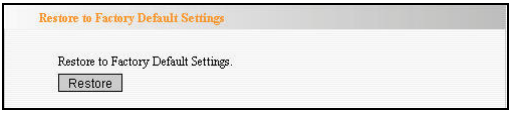


Click “Restore” button to restore previous settings.



12.4 Restore to Factory Default Setting

This button is to reset all settings to the default values. It means the router will lose all the settings you have set. So please note the related settings if necessary.



✧ **Restore:** Click this button to restore to default settings.

Factory Default Settings:

User Name: admin

Password: admin

IP Address: 192.168.0.1

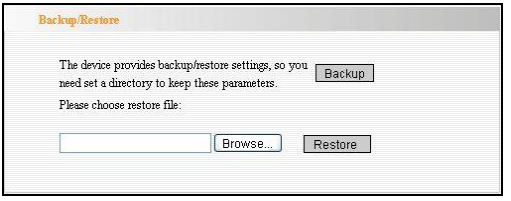
Subnet Mask: 255.255.255.0

NOTE:

After restoring to default settings, please restart the device, then the default settings can go into effect.

12.5 Upgrade Firmware

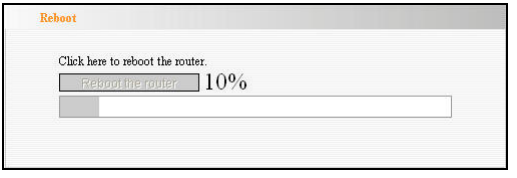
The Router provides the firmware upgrade by clicking the "Upgrade" after browsing the firmware upgrade packet which you can download from www.tenda.cn.



- ✧ **Browse:** click this button to select the upgrade file.
- ✧ **Upgrade:** click this button to start the upgrading process. After the upgrade is completed, the Router will reboot automatically.

12.6 Reboot the Router

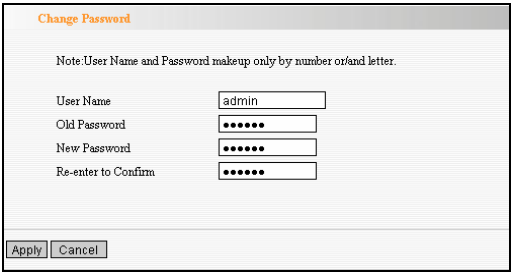
Rebooting the router makes the settings configured effective or to reset the router again if the configured settings fail.



Reboot the router: Click this button to reboot the device.

12.7 Password Change

This section is to set a new user name and password to better secure your router and network.



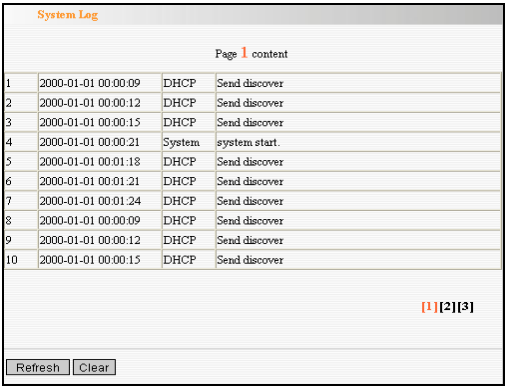
- **User Name**: Enter a new user name for the device.
- **Old Password**: Enter the old password.
- **New Password**: Enter a new password.
- **Re-enter to Confirm**: Re-enter to confirm the new password.

NOTE:

It is highly recommended to change the password to secure your network and the Router.

12.8 System Log

The section is to view the system log. Click the “Refresh” to update the log. Click “Clear” to clear all shown information. If the log is over 150 records, it will clear them automatically.


System Log
Page 1 content
1 2000-01-01 00:00:09 DHCP Send discover
2 2000-01-01 00:00:12 DHCP Send discover
3 2000-01-01 00:00:15 DHCP Send discover
4 2000-01-01 00:00:21 System system start.
5 2000-01-01 00:01:18 DHCP Send discover
6 2000-01-01 00:01:21 DHCP Send discover
7 2000-01-01 00:01:24 DHCP Send discover
8 2000-01-01 00:00:09 DHCP Send discover
9 2000-01-01 00:00:12 DHCP Send discover
10 2000-01-01 00:00:15 DHCP Send discover
[1] [2] [3]
Refresh
Clear

- ✧ **Refresh:** Click this button to update the log.
- ✧ **Clear:** Click this button to clear the current shown log.

12.9 Logout

After you have finished the settings completely, in logout page click “Yes” to logout the web management page.

Appendix 1：Glossary

Access Point(AP): Any entity that has station functionality and provides access to the distribution services, via the wireless medium(WM) for associated stations.

Channel: An instance of medium use for the purpose of passing protocol data units (PDUs) that may be used simultaneously, in the same volume of space, with other instances of medium use(on other channels) by other instances of the same physical layer (PHY),with an acceptably low frame error ratio(FER) due to mutual interference.

SSID: Service Set identifier. An SSID is the network name shared by all devices in a wireless network. Your network's SSID should be unique to your network and identical for all devices within the network. It is case-sensitive and must not exceed 20 characters (use any of the characters on the keyboard).Make sure this setting is the same for all devices in your wireless network.

WEP: Wired Equivalent Privacy (WEP) is the method for secure wireless data transmission. WEP adds data encryption to every single packet transmitted in the wireless

network. The 40bit and 64bit encryption are the same because of out 64 bits, 40 bits are private. Conversely, 104 and 128 bit are the same. WEP uses a common KEY to encode the data. Therefore, all devices on a wireless network must use the same key and same type of encryption. There are 2 methods for entering the KEY; one is to enter a 16-bit HEX digit. Using this method, users must enter a 10-digit number (for 64-bit) or 26-digit number (for 128-bit) in the KEY field. Users must select the same key number for all devices. The other method is to enter a text and let the computer generate the WEP key for you. However, since each product use different method for key generation, it might not work for different products. Therefore, it is NOT recommended using.

WPA/WPA2: A security protocol for wireless networks that builds on the basic foundations of WEP. It secures wireless data transmission by using a key similar to WEP, but the added strength of WPA is that the key changes dynamically. The changing key makes it much more difficult for a hacker to learn the key and gain access to the network.WPA2 is the second generation of WPA security and provides a stronger encryption mechanism through Advanced Encryption Standard (AES), which is a requirement for some government users.

Appendix 2: Questions and Answers

In this part some questions and problems normally found during the router's usage and installation will be given with suggested answers. If your problems are not in the list, please log into our website www.tenda.cn or send an E-mail to support@tenda.cn, and we will immediately reply.

1、 Cannot login to the Web interface of the Router after you enter the IP address in the address field?

- ✓ **Step 1:** Check if the router is working and if the "Power" LED is illuminated. After the device is powered on for a few seconds, the SYS indicator on the front panel should be illuminated. If it is not, please contact us.
- ✓ **Step 2:** Check the network cables are connected correctly and the corresponding LED indicator is illuminated. Sometimes, the indicator is illuminated, but it does not mean it is functioning.
- ✓ Run "Ping" command and check if it can ping the Router's LAN IP address 192.168.0.1. If it is OK, please make sure your browser does not access the Internet by proxy server. If the ping fails, you can press the "RESET" button for 7 seconds to restore to default settings. And then repeat the ping operation. If it still does not work, please contact us.

2、Forget the login password and cannot enter the setting page. What can I do?

✓ Press the “RESET” button for 7 seconds to restore the Router to default settings.

3、 The computer connected with the Router shows IP address conflict. What can I do?

✓ Check if there are other DHCP servers in the LAN. If there are then disable them. The default IP address of the router is 192.168.0.1 please maker sure the address is not being by another device. If there are two computers with the same IP address, please modify one of them.

4、 I cannot use E-mail and access the Internet. What can I do?

✓ It happens in ADSL connection and Dynamic IP users. And you need modify the default MTU value (1492). In the “WAN Setting” modify the MTU value with the recommended value as 1450 or 1400.

5、How to configure and access the Internet via Dynamic IP?

- ✓ In Setup Wizard of the Web utility interface, select "Dynamic IP" connection type and click "Save" to activate it. As some ISPs bind the user computer's MAC address, you need to clone the Router's WAN MAC address to the bind21ing PC's MAC address. Select "MAC Address Clone" in "Advanced Setting" to input your computer's MAC address and click "Apply" to activate it.

6、How to share my computer's source with other users in Internet?

- ✓ If you want Internet users to access the internal server via the router such as: e-mail server, Web, FTP. You can configure the "Virtual Server".
- ✓ **Step 1:** create your internal server, make sure the LAN users can access these servers and know related service port. For example, Web server's port is 80; FTP is 21; SMTP is 25 and POP3 is 110.
- ✓ **Step 2:** in the router's web click "Virtual Server" and select "Single Port Forwarding".
- ✓ **Step 3:** input the external service port given by the router, for example, 80.
- ✓ **Step 4:** input the internal Web service port, for example, 80.

- ✓ **Step 5:** Input the internal server's IP address. If your Web server's IP address is 192.168.0.10, please input.
- ✓ **Step 6:** select the communication protocol used by your internal host: TCP, UDP, ICMP.
- ✓ **Step 7:** click "Apply" to activate the settings.
- ✓ The following table has listed the well-known application and service port:

Server	Protocol	Service Port
WEB Server	TCP	80
FTP Server	TCP	21
Telnet	TCP	23
NetMeeting	TCP	1503、1720
MSN Messenger	TCP/UDP	File Send:6891-6900(TCP) Voice:1863、6901(TCP) Voice:1863、5190(UDP)
PPTP VPN	TCP	1723
Iphone5.0	TCP	22555
SMTP	TCP	25
POP3	TCP	110